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# M.A.C.E. JOURNAL

*"People For Computers"*

- \* TIPS ON COMPUTER CARE
- \* BAKER STREET BYTES
- \* PLATO'S CORNER
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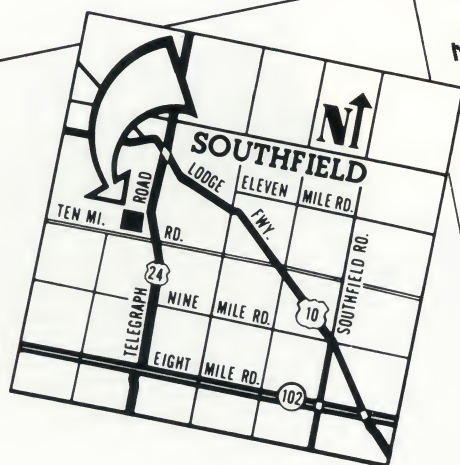
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## SOME TIPS ON COMPUTER CARE

by Martin Siml

I thought I would share a few tips on the care and maintenance of your computer garnered over 16 years of Field Engineering experience.

Computers do not like to operate in high temperature conditions. They also have a hard time tolerating dusty and/or dirty environments.

Although we all do it (myself included), drinking a beverage around a computer is asking for trouble. Liquid of any type getting into the computer causes shorts, and can destroy your computer. If you do accidentally spill something into your computer, the best course of action is to immediately turn it off. Then disconnect the power and take it to a service center.

A highly sugared beverage, besides causing shorts, will also gum up the keyboard. As it evaporates, it leaves behind the sugar. This is perhaps the worst kind of spill, because it can be potentially the most expensive to fix. Also eating around the computer should be discouraged, because of the crumbs that can fall into the computer.

Computers do not like a low humidity environment. Low humidity causes static electricity. Static discharge from you to your computer can cause many things, including damage. The usual problems caused by static discharge are two in number. You may lose the program in memory as the static discharge clears the RAM, or it can cause a disk to be wiped out and unrecoverable.

Conversely, high humidity can cause corrosion on the components in your system. The ideal humidity range is between 40% and 60%. The ideal temperature range is between 60 and 80 degrees. These figures are for an operating system. Higher and lower extremes can be tolerated for a system that is not running.

Smoking around a computer is detrimental to it's health. Ash can fall into

the computer, (it filters into the smallest places), and cause intermitant shorts. Smoke leaves an oily film over everything. If this film gets thick enough, it can conduct electricity. This film can also build up on your monitor or TV, causing distortion.

A film build up on disks causes the disk head to become dirty more often, causing read-write problems. Smoke also contains particals which when present in a disk drive, creates an abrasive type action. This causes your read-write head to go bad sooner, and degrades your disk media.

The 40,000 volt charge on your color screen attracts dust to your monitor or TV. This should be cleaned regularly with a damp cloth while it is turned off. The outside of your printer and computer can also be cleaned with the same damp cloth. Dust covers should be used on all components when they are not in use.

To clean the head on your disk drive, it is not recommended to use an abrasive type cleaner. Most commercially available disk cleaners are of the abrasive type (check the label). Abrasive type cleaners cause excessive head wear. Isopropol alcohol is recommended to clean the head on your drive. Do not use rubbing alcohol as it contains additives that leave a residue. 95% pure Isopropol is available at your local drugstore for a nominal charge. Also pick up some cotton swabs to use with the alcohol.

If you remove the cover from your disk drive, (WARNING: removing the cover will invalidate your warranty), you can see the inside of your drive, and watch it while it operates. If you put a disk in the system and turn it on, you will note a little arm that drops down on the disk. This arm is the pressure pad that pushes the disk against the head. The head is directly underneath the arm.

With the disk drive off and unplugged, remove the disk, and scrub the head underneath the pressure pad with a cotton swab dipped in Isopropol alcohol, followed with a dry cotton swab to dry off the head. Do this very gently so as not to harm the head. That is all that it takes to clean the head on your disk drive.



The quality of power available to your computer also has an effect on it. If power is very bad, it can damage your computer. Power problems usually show up as a direct result of power sags, and/or spikes. Brownouts are also not to healthy for your computer. If you are aware that a brown out is taking place, the best course of action is not to use the machine at all.

Power sags and spikes are caused by large users of electricity, on the same line, being turned on and off. For example; appliances, motors, drills, saws, ect. Sags and spikes can cause damage to a system, but usually they just cause funny things to happen to the program and the TV. You may lose a program, or it may lock up in a loop. Disks can also be wiped out during these occurrences.

My Atari is on the same circuit as our washing machine, which causes my TV screen to shrink momentarily when it goes on. The Atari, however, seems to be well protected against this type of occurrence, and just shrugs it off.

While all the information above is accurate, if you do not understand anything, please do not attempt it. As I, or this publication, can not be responsible for any damage resulting from the use or misuse of the directions in this article. If you are unsure about anything, consult professional advice.

## ASSEMBLER SIG

By Todd Meitzner

### November's Meeting

The meeting place for November's meeting is to be at Al Meoke's house in Warren. It will take place as usual on the first Thursday, November 3rd. It will start at 7:00 with socializing with the actual business portion beginning at 7:30. You may contact Al Meoke at 775-6895 or me at 542-1752 for further info. Hope you are there.

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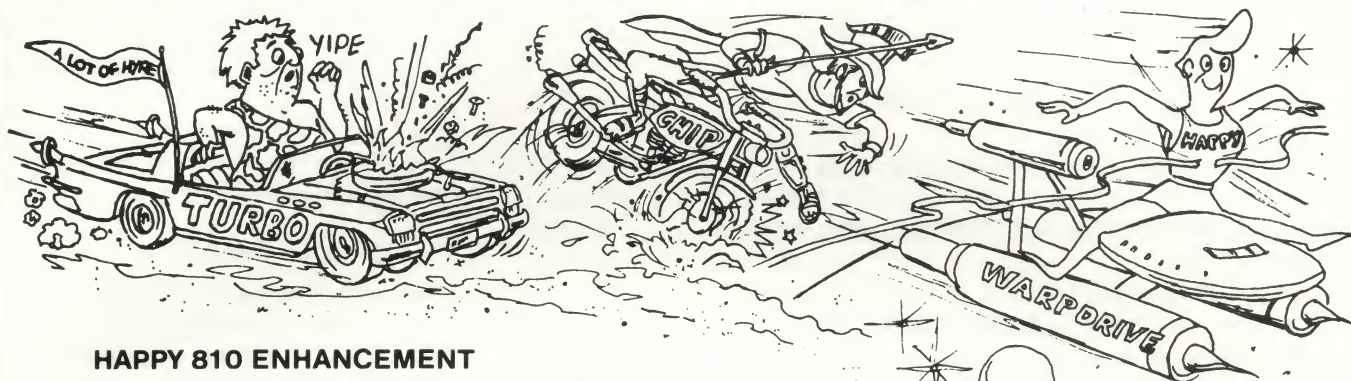
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ENHANCED 810 whole disk (any format) read time with standard software: 68 seconds

ENHANCED 810 whole disk (any format) read time with WARP DRIVE software: 43 seconds

Standard software whole disk write and verify time: 238 seconds

WARP DRIVE software whole disk write and verify time: 62 seconds

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## JUMPMAN & JUMPMAN JR.

Reviewed by Martin Siml

You say that you like Donkey Kong, and you flip out over Miner 2049'er. Well hold onto your socks, because Jumpman will send you into orbit.

Canyon Climber, Miner 2049'er, and Donkey Kong are all great games and a lot of fun to play. They all have one fault however, after extensive play, it becomes very easy to go through all the mazes. Donkey Kong and Canyon Climber are limited to 4 and 3 screens respectively. Miner 2049'er has ten screens and is very addictive. Hold onto your hats, because Jumpman has 30, yes 30 different screens that can be played on five different levels, and eight different speeds!!! There is even one level where the screens come up in a random order picked from all 30 screens.

The scenario for Jumpman says that he is caught inside a satellite and must diffuse all the bombs before it blows up. There are various hazards along the way. I have been able to advance 18 screens after about 1000 hours of play. In these screens I have been variously chased by two types of robots, falling bombs, dragons, vampires, alien craft, blocks which cause me to jump in a random direction, barrels, and some very vicious birds. Some of the hazards follow a pattern (such as the robots) which is determined by the order in which you disarm the bombs. Others, such as the birds, and the vampires actually chase you across the screen.

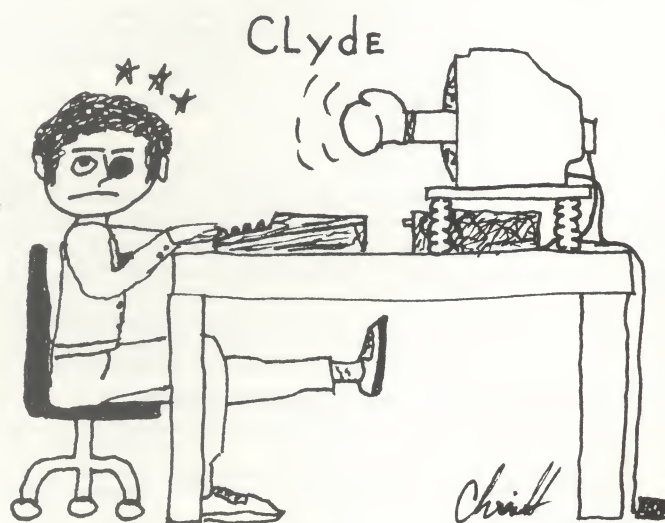
You start with seven men and are awarded another for each 10,000 points amassed. So far just an advanced Miner 2049'er. But the designers throw in something else just to make it interesting, randomly bullets come drifting across the screen, they sense when you are lined up with them and fire. If you are hit you have lost a life. On some screens you turn invisible when certain bombs are diffused. Other screens the maze changes as you are diffusing the bombs. Several contain puzzles that award extra points if you figure it out. Two mazes are invisible. On

one of the mazes the bombs don't stay put, but move all over, in a random fashion. It is a fascinating game, and one that you will be hard put to master. I don't know of any who have run all thirty mazes in a row. My brother, who can run Miner 2049'er three times in a row can't get by more than 15 screens.

The program records high score and high bonus for the top ten games on the disk. WARNING, removing the disk while this is happening, will destroy the disk.

EPYX has found this game so successful that they are bringing out a cartridge version, called Jumpman Jr.. My kids say the sound effects are better on this one. It contains 15 screens, but only gives you five men. The mazes are different from Jumpman. Bullets are still present, and extra bonus points are awarded for finishing a maze ahead of a count down number, just like in Jumpman. Due to the fact that it is a cartridge, high scores are not kept at all.

I and everybody I talk to would recommend these two games. In fact I would suggest that you buy both games. However, please be warned that once you start playing them, you can't quit!! Much sleep will be lost trying to beat it.



"THE SALESMAN SAID THIS NEW SOFTWARE 'HAD A PUNCH TO IT,' BUT THIS IS RIDICULOUS."



## BAKER STREET BYTES

### A WINDOW INTO MEMORY

By RICHARD GIZYNSKI

The following program is a demonstration of how Atari strings can provide a window into memory. Please type the program in, CSAVE or save it to disk, then follow the instructions in the REM statements. You will open the door to many interesting discoveries. But first a description of what we're going to do.

Whether you program in BASIC, Assembler or some other language, Atari processes all programs in machine language. When your Atari is turned on, RAM contains a lot of zeros. Load a program and you start changing those zeros to other numbers. The numbers are instructions or information that the program uses to store the program.

In the case of BASIC the numbers are tokens substituted for commands interlaced with the characters and words of REM and PRINT statements and other elements used in a program. By using the handy Atari strings, we can translate these numbers into characters and see how your Atari stores a program.

We'll keep the program really simple so you have plenty of visual references and can see the features of how lines are stored. To make this work, type the program in, CSAVE it (or save to disk), turn your Atari off, then CLOAD (or load from disk) the program. RUN the program. Then type in LIST, so the bottom of the program appears on the screen. Next type NEW and press RETURN to clear the program out. Move the cursor up to line 500 and press RETURN for lines 500, 510 and 520 to be entered. Then type RUN.

```
10 REM TESTING THE ATARI
20 REM AND ITS MEMORY
30 REM FOR BASIC TOKENS
40 REM
50 REM BY RICHARD GIZYNSKI
60 REM
70 REM
80 REM INSTRUCTIONS:
90 REM
100 REM TYPE IN THIS PROGRAM
```

```
INCLUDING
110 REM INCLUDING THESE REM
    STATEMENTS
120 REM
130 REM NEXT CSAVE THE PROGRAM
140 REM
150 REM NOW TURN OFF YOUR ATARI.
    THIS
160 REM IS AN IMPORTANT STEP IN THE
170 REM DEMONSTRATION.
180 REM
190 REM NEXT CLOAD THIS PROGRAM
200 REM
210 REM TYPE RUN
220 REM
230 REM YOU WILL SEE A LOT OF HEARTS
240 REM APPEAR ON THE SCREEN. THESE
250 REM HEARTS ARE THE ATARI
    CHARACTER
260 REM FOR ZERO. THEY SHOW YOU THAT
270 REM EACH POSSIBLE CHARACTER IN
    THE
280 REM STRING IS EMPTY, BUT STILL
290 REM BEING HELD OPEN. THE LAST
300 REM CHARACTERS ARE HI
310 REM
320 REM NOW TYPE LIST
330 REM
340 REM NOW TYPE NEW
350 REM
360 REM NOW MOVE YOUR CURSOR TO
370 REM LINES 500, 510 AND 520 AND
380 REM PRESS RETURN FOR EACH LINE
390 REM
400 REM NOW TYPE RUN
410 REM
500 DIM A$(5000)
510 A$(4999)="HI"
520 PRINT A$
```

If you follow instructions here's what should happen. When the program runs the first time, The DIM statement on line 500 reserves 5000 bytes or characters worth of space. Line 510 tells Atari to make string A\$, starting at the 4999th character equal to "HI". This opens up the string. Whatever numbers were in the memory area used to store this string were left untouched but included as the 1st to 4998th character. The PRINT statement on line 520 printed this giant string to the screen.

The 1st through 4998th characters overlapped an area of memory that had contained all zeros and a heart is the zero character in the Atari character set. So you



got a screen full, and then some, of hearts with a HI tacked on in the end.

When you typed LIST you didn't change anything in the program or string areas of memory. This just made it more convenient to re-enter the last three lines after typing NEW.

The NEW command doesn't clean out memory. It just resets the pointers that tell Atari where in memory the BASIC program starts, ends, etc. The program area is unchanged but Atari 'forgot' that it was there and how to access it.

Moving the cursor up to the last three lines and entering starts a new program. Atari just writes over the old space and takes what it needs. When you type RUN the string A\$ is re-inflated but with a change in the area of memory it overlaps.

The first time string A\$ was proceeded by a program with lots of lines and lots of characters in REM statements. Now there are only three program lines in front of the storage space used to hold the string, since the first 4998 characters are whatever happened to be in memory when we inflated the string, we have 'captured' most of the previous program. The only part we are missing is the part that our 'new' program over wrote when we entered it.

Let's take a better look at this old program. type in RUN again but before typing RETURN hold one finger over the 1 and your thumb over CONTROL. After pressing RETURN press CONTROL and type one. This acts like the pause control on a tape recorder and freezes the action on the screen. Use the CONTROL 1 combination to toggle the action on and off.

Now, if you'll get your BASIC manuals out, there is a chart of Atari's character set near the back. By looking up the odd characters on the screen, you can find the number it represents by looking at the chart's decimal column. You can start to see a pattern developing. A character that translates to a line number, a heart, two characters that look alike, a heart and some words. There is an invisible character, the RETURN, on each line. Very interesting!

If you keep CONTROL 1 toggeling, you will eventually notice the second character on each line change from a heart to a slanted line. A one on the charts. That second character multiplied by 256 and added to the value of the first character is

the line number. The third number and fourth number translate to 'how many characters is it from the start of this line of code to the start of the next line of code' and 'how far is from the start of this line of code is it to the start of the next statement'. The fifth character is the token for REM and the sixth character, the invisible RETURN, complete the tokenization of the smallest line.

Well, I've gotten you started on a new investigation. I know it's rotten of me to quit here when things are getting interesting but you can learn a lot by experimenting. If you get stuck, or want to know more, I can recommend two good books that cover tokenization and more -- Compute's First Book of Atari and De Rey Atari. Happy experimenting!

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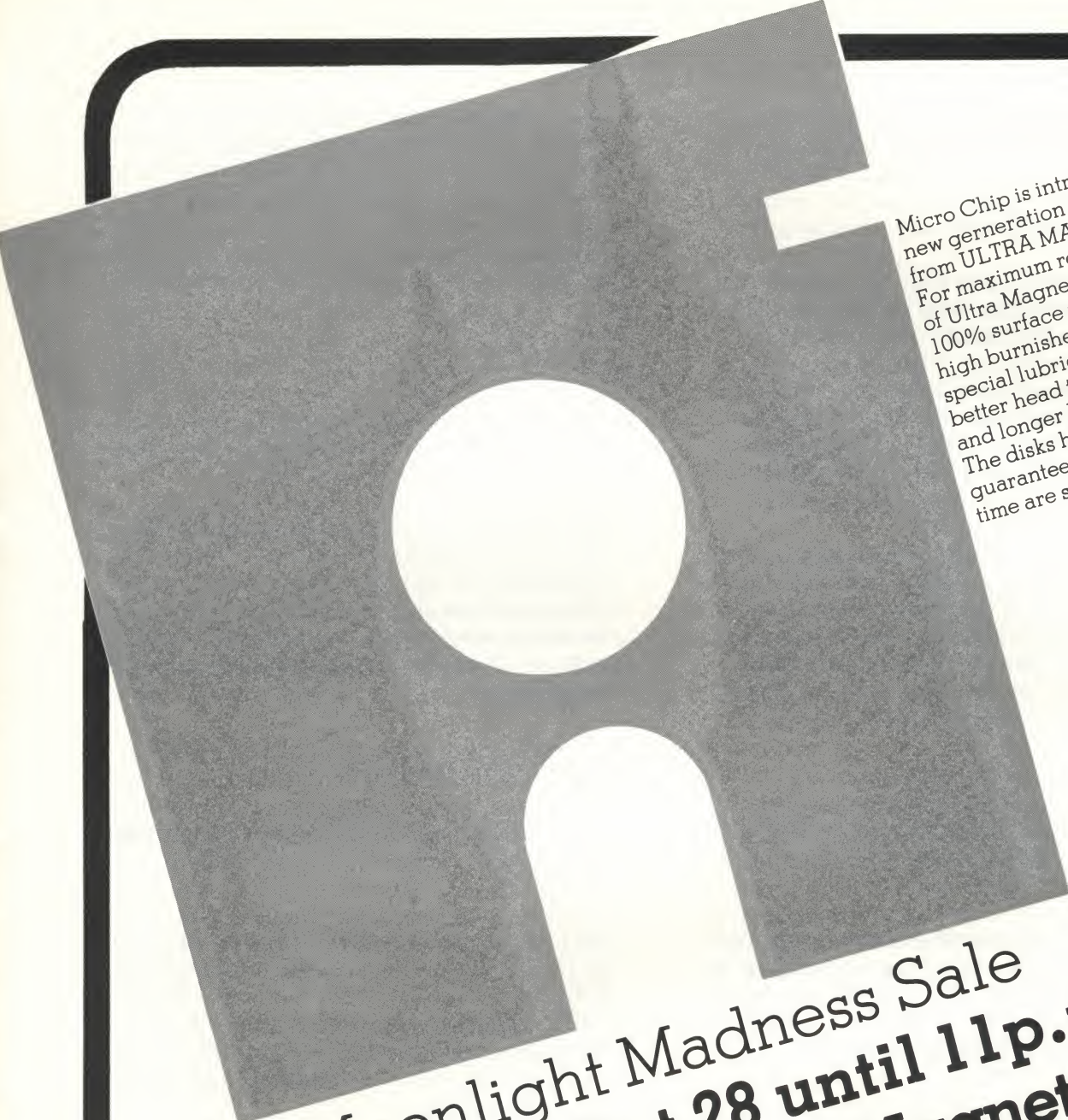
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## SINCE YOU ASKED ...

From Judy B. and Wally B.

**Q:** Why not list the names and phone numbers of the Special Interest Group (SIG) chairpersons in the M.A.C.E. newsletter?

**A:** We've passed this suggestion on to Chris Hansen, the new newsletter editor. We hope that the list will soon become a regular feature in the M.A.C.E. JOURNAL.

### Editor's Note

Some of the SIG Groups closed down for the summer, but have started up again. Look for a list of the active SIG Groups elsewhere in the Journal. From now on, there will be a report from each active SIG Group printed in the Journal each month.

Chris

-- --

From Ed S.

**Q:** Can M.A.C.E. provide a telephone directory so members can see who lives near them?

**A:** Many of our members have unlisted telephone numbers and probably wouldn't like to see them in print. However, we will try to print and post a membership address list on a semi-regular basis.

-- --

From Al S.

**Q:** Why don't the general meetings start on time? If 7 is a problem, then schedule it for 7:30, but start on time.

**A:** We try to open the various tables by 7 P.M. This allows our members to pick up their newsletters and purchase disks or cassettes prior to the general meeting. We will make every effort to start the meeting promptly at 7:30 P.M.!

-- --

From Richard R.

**Q:** Can we do something to improve the audio (sound) of presentations at our meetings?

**A:** Yes, we soon hope to improve the sounds you hear at our meetings. Richard has been kind enough to research his own question and has offered to help us improve our audio. We hope that this will lead to everyone attending our meetings being able to hear, as well as, see what's happening.

-- --

From Ed K.

**Q:** Is there a basic compiler that works with a cassette? Everything on the market seems to be made for disk users.

**A:** Please see ANALOG magazine NO. 11 for an excellent review of three basic compilers. I believe that you'll see that these reviews all show the disk drive being used for work space, as well as, input and output. It appears that cassette just isn't supported.

-- --

From Lon H. and Don S.

**Q:** Is there an ATARI beginners group in this area? Can M.A.C.E. offer these classes?

**A:** There are probably dozens of beginning basic groups in the Greater Detroit area. However, most of them normally meet in their local computer store. Also, we (M.A.C.E.) hope to hold mini-classes in the near future, during the second half of our general meetings.

-- --

From Tony A.

**Q:** What has happened to the Telecommunications SIG?

**A:** It's alive and well, but has changed it's location. Robin Ward, the SIG chairman, works for Tech HiFi and was recently reassigned to the Livonia store (on Plymouth Road between Wayne & Levan). He's left messages on the various local boards asking people what they want to do with the Telecommunications SIG. If you are interested, stop by and see Robin, or give him a call on (313) 525-7360.

-- --



## **SUPERCLONE**

(Disk Backup Program)

reviewed by Martin A. Siml

I recently sent for the program 'SUPERCLONE' by Frontrunner Computer Industries. The ad for the program stated "Others make claims. . . SUPERCLONE makes copies!". I waited for over 8 weeks for delivery. It seems that Frontrunner is more like a backslider when it comes to shipping their product.

When the Utility finally came, I eagerly opened the package and read the directions. It didn't seem all that hard to work. I booted the disk and some great graphics of Superman with a 'C' on his chest come on my screen, along with some musical fanfare. The menu then appeared allowing me to Scan, Format, Backup, or Exit the program.

Well lets see what Scan does. Scan gave me a listing (either to the screen or the printer) of what sectors contained data, where a sector was empty and where a sector was bad. This might prove useful, however it would not tell me if there was multiple sectors, sector skew, or custom formatting, which are also popular protection schemes.

Format! It does just that, it formats your disk. Well this is nothing I could't do just by using DOS.

Backup! Aha now it should get interesting! What a disappointment. Backup is nothing more than copying a whole disk using a sector copier. Big deal, we already have SCOPY in the MACE Library.

Exit! That lets me exit the program. Hey wait a cotton picking minute here. Where's the backup of a protected disk? Oh, under Format, I can also create "bad sectors". This should come in handy. Wait a minute, read the directions carefully. "Get a roll of cellophane tape and tear off approximately 5 inches." What am I to do with this? Ah yes, afix it to the front of the disk to create a tab to hang out the front of the drive when the disk is inserted. What do you do with this "tab"? Well while the drive is continuously writing to that sector you

want "bad", you are to: "Gently pull and release the tab in a continuous motion as if you were milking a cow or had nervous hands." This is suppose to slow the drive down so you can write a bad sector.

You had better be good, because five different people tried on mine, and we didn't get one bad sector. We did however get several physically ruined disks, and it certainly didn't help the drive any. The manual says "be patient and do not get frustrated. . . It may take 'several' minutes to do the job. We worked at it for over an hour with no results.

When I tried calling Frontrunner, I found a recorded message which said that they would only answer the phone on Fridays, because they had a big project in the works. Well, they didn't answer on the three different Fridays that I tried calling them. Even at various times of the day.

If you happen to have an extra \$49.95 laying around the house, you might send off for this program. Or if you are nostalgic for milking cows, perhaps you can use it. Better yet, give me the money. At least you will get some conversation from me. As you can see, I definitely do not recommend this product. In fact, I think it's a Big Ripoff!

---

### **WANTED TO BUY**

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### **ANTIC**

April/May, Vol. 1 ..... Issue #1  
June/July, Vol. 1 ..... Issue #2  
Aug/Sept, Vol. 1 ..... Issue #3  
Dec/Jan, Vol. 1 ..... Issue #5

### **ANALOG**

Issues #1 ..... through ..... Issue #6



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## PRESIDENTIAL RAMBLINGS

Well, I've been President now for well over three weeks. And the job has been everything I thought it would be. Time consuming! It is very easy to not devote enough time to the office, but that hasn't been a problem . . . yet!

I've been very impressed with the support all of us officers have received from you the members. It is your suggestions and help that keep us going and help the organization. Keep it up!

I'm really soory TARICON couldn't come off as scheduled. Too many promises that weren't kept, too many other things going on that conflicted, too costly for many manufacturers to attend ("the economy is bad now . . ."), the list goes on. However we did get an education. We learned some things to do and not to do. We also learned that there is overwhelming support out there for a convention of this nature. We received hundreds of requests from people all over the U. S. and Canada for information on the convention. What we need to decide for ourselves is whether we can or want to try it again. I think, given 100% support from the membership and sufficient time to plan for it; that we can produce an entertaining and educational show. Let us know what you think.

KUDOS: While on the subject of TARICON, I'd like on behalf of MACE to thank Paul Wood and his staff from MDG for laying the plans for a potentially great convention. Paul's concept of a good convention was well orgained and well thought out. It is hoped that we can count on Paul when TARICON '84 comes up.

A lot of thanks go out to Tom Zturza; who took over for Gretchen Levitan while she had her baby; and to Richard (Mr. Baker Street Byte) Gizynski for helping with the newsletter while Arlan Levitan helped Gretchen have her baby!

BOODOS (the opposite of kudos?): These go out to the people who made my Atari 810 drive. Why must it quit functioning every other month? No, I'm not knocking

everybody and his brother in Sunnyvale. Just the unnamed (or unnumbered) inspector who let a lemon slide by. Please get me a different drive!

## NOVEMBER MACE EDUCATION MONTH

Have you bought an educational program for your son or daughter within the last six months? We'd like you to review it for the next MACE JOURNAL. Our next meeting will deal with education and the Atari, and we wish to co-ordinate the November issue with the meeting. Send your articles to MACE c/o the newsletter editor.

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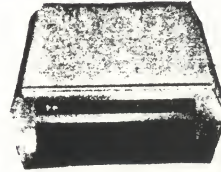
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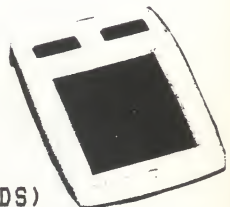


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## PLATO'S CORNER

Almost all of us who bought our computers justified it's purchase with the logic that a computer would be a great educational experience for our children. A financial sacrifice in the name of education - what a noble thought!

The scenario has probably been the same for most of us. First we purchase an educational program, to show the family we're really serious, and of course STAR RAIDERS, after all we have to demonstrate to our friends and neighbors the awesome graphics capabilities of the Atari. Next we sit the children down in front of the keyboard, run the program and force them to sharpen their addition skills. One time through the program then in goes the STAR RAIDERS cartridge. At last, joystick heaven, with that warm feeling inside knowing that we did all this in the name of education.

We've had our Atari for nearly two years now and in spite of the thousands of basestars that have been destroyed our computer has definitely had a positive effect on our children's educational development. The road to successful utilization of a computer however can be frustrating, difficult, and expensive.

Learning to program and writing those customized programs for the children's specific needs can provide for the frustrations. The difficulty arises when a parent needs computer time to develop programs and three children need time to use that same computer. The solution? A second computer or purchase of commercial software - expensive!

What I would hope to accomplish by the initiation of this column is to provide a forum for parents who would like to see their computers used in the way we had originally envisioned them being used, and a clearinghouse for ideas, programs, software reviews, applications, etc.

The spectrum of educational applications is by no means limited to the use of math and spelling programs. How about high level computer languages like PILOT, LOGO, and

BASIC, the study of foreign languages, music, computer art, science, speech synthesis, geography, the list is almost endless.

A good initial project might be the assembling of a library of public domain educational software and categorizing it by age and interests. Our MACE library certainly would be an excellent starting point for our search.

All that is necessary are ideas, time and interested parents. We already have the best home computer made, just stick in your Star Raiders cartridge if you have any doubts.

Please send your ideas, suggestions, etc. to:

Plato's Corner  
552 Pinehurst  
Rochester, MI. 48063

-- -- --

## Editor's Note

I am proud to announce that Plato has agreed to join our staff here at the M.A.C.E. Journal, and will be writing a monthly column.

As you can tell by his first article, he is highly interested in the educational applications of the Atari Home Computer in the family environment.

If you happen to have educational programs that you've written, and wouldn't mind giving them up to Public Domain, now is the time to do so.

As for looking through the MACE LIBRARY, I happen to recall seeing quite a few of them there. But I'll leave that up to our readers.

There will be a new educational game listing in an upcoming issue of the Journal. It is rumored to be a four letter word game with over 2,200 words in it's dictionary. The final touches are being put to it now. Look for it.

Chris



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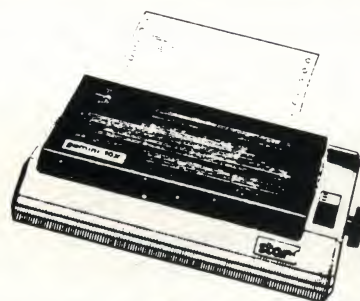
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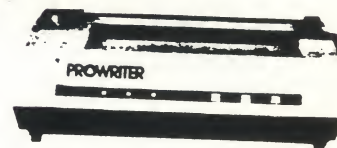
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# AUTOMATIC WORD SEARCH PUZZLE GENERATOR

Revised by RICHARD GIZYNSKI

Here's a little goody for those of you who have printers. It's an olde but a goodie that generates 20 x 20 word search puzzles. I originally got the program from Marshal Dubin (I think he typed it in from Compute) and I added a section that selects its own words, a lot of words to choose from and a nice routine to alphabetise and columate the words. If your interested in learning, this program is one you can get a lot out of.

```
10 REM PUZZLE 20 AUTOMATIC
20 REM REVISED BY RICHARD GIZYNSKI
30 POKE 752,1:DIM NAME$(20):SETCOLOR 2,0,1
40 ? "":POSITION 10,5:PRINT "WORD SEARCH PUZZLE"
50 ? :? "      20x20 GRID"
60 ? :? "      (AUTOMATICALLY?)"
70 FOR I=1 TO 800:NEXT I
80 ? "":POSITION 2,5:PRINT "TO CREATE A PUZZLE, SIMPLY ENTER A  WORD WHICH YOU
WOULD LIKE TO HAVE IN"
90 PRINT "THE PUZZLE AFTER THE '?' PROMPT."
100 ? :? "WHEN YOU'VE ENTERED ALL THE WORDS YOU WOULD LIKE IN THE PUZZLE, ENTER
THE"
110 ? "WORD 'STOP' AND THE ATARI WILL DO THE REST."
120 ? :? "IF YOU WOULD LIKE A PUZZLE FOR YOUR- SELF(BLANK SCREEN), THEN TYPE '1';"
130 ? "OTHERWISE, TYPE '0' TO BEGIN: ";
140 INPUT BLANK:PRINT "":Z=0
150 ? :? "ENTER PUZZLE NAME ":INPUT NAME$:IF LEN(NAME$)>20 THEN 150
160 ? :? "ONE MOMENT PLEASE"
170 DIM W$(1000),A$(41),B(3,3),A(20,20),Q$(1),S$(20),B$(50),D$(40),LS$(40)
180 DIM DL(50),WORD(50)
190 B$="
";D$="-----"
200 FOR I=1 TO 20:W$((I-1)*50+1)=B$:FOR J=1 TO 20:A(I,J)=0:NEXT J:NEXT I:LE=0
210 ? "}"
220 REM BRANCH POINT FOR AUTO
230 TRAP 230: ? :? "WOULD YOU LIKE THE COMPUTER TO MAKE": ? "UP IT'S OWN PUZZLE
[Y/N]":INPUT A$
240 IF A$(1,1)="Y" THEN C1=1:GOTO 1050
250 IF A$(1,1)<>"N" THEN 230
260 Z=Z+1
270 POSITION 2,22:PRINT "WORD #";Z;"":INPUT A$:IF A$="" THEN 270
280 IF A$="STOP" THEN 620
290 L=(Z-1)*20:EL=LEN(A$):W$(L+1,L+EL)=A$:IF LE<EL THEN LE=EL
300 U=INT(RND(1)*20)+1:L=INT(RND(1)*20)+1
310 FOR X=-1 TO 1:FOR Y=-1 TO 1
320 IF X=Y AND Y=0 THEN 420
330 X1=L:Y1=U
340 FOR C=1 TO LEN(A$)
350 X1=X1+X:Y1=Y1+Y
360 IF X1>20 OR X1<1 OR Y1>20 OR Y1<1 THEN B(X+2,Y+2)=0:GOTO 420
370 IF A(X1,Y1)=0 THEN 400
380 IF A(X1,Y1)<>ASC(A$(C,C)) THEN B(X+2,Y+2)=0:GOTO 420
390 B(X+2,Y+2)=B(X+2,Y+2)+1
400 NEXT C
410 B(X+2,Y+2)=B(X+2,Y+2)+1:B=B+1
420 NEXT Y:NEXT X
```



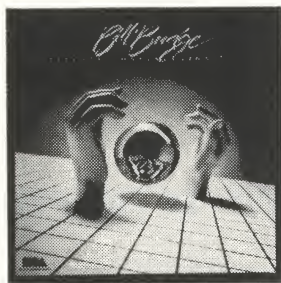
```

430 IF B=0 THEN 300
440 R=2:D=2
450 FOR X=1 TO 3:FOR Y=1 TO 3
460 IF B(X,Y)>B(R,D) THEN R=X:D=Y
470 NEXT Y:NEXT X
480 X=R-2:Y=D-2
490 IF X=-1 AND Y=-1 AND B(1,1)=1 THEN 510
500 GOTO 530
510 X=INT(RND(1)*3)-1:Y=INT(RND(1)*3)-1
520 IF (X=0 AND Y=0) OR B(X+2,Y+2)=0 THEN 510
530 X1=L:Y1=U
540 FOR C=1 TO LEN(A$)
550 X1=X1+X:Y1=Y1+Y
560 A(X1,Y1)=ASC(A$(C,C))
570 IF BLANK THEN 590
580 POSITION X1+1,Y1:PRINT CHR$(A(X1,Y1));
590 NEXT C
600 B=0:FOR X=1 TO 3:FOR Y=1 TO 3:B(X,Y)=0:NEXT Y:NEXT X
610 POSITION 2,22:PRINT " " ";;RETURN
620 FOR X=1 TO 20:FOR Y=1 TO 20
630 IF A(X,Y)<>0 THEN 650
640 A(X,Y)=45:POSITION X+1,Y:PRINT "-";
650 NEXT Y:NEXT X
660 POSITION 2,22:? "READY TO PRINT: TURN ON PRINTER AND HIT 'RETURN'";:INPUT
A$:LPRINT D$
670 LPRINT :LPRINT "WORD PUZZLE ANSWER KEY FOR: ":LPRINT NAME$
680 LPRINT :GOSUB 770:LPRINT :LPRINT D$:LPRINT
690 ? :? "PLEASE WAIT A MOMENT FOR ME TO CREATE PUZZLE..."
700 FOR X=1 TO 20:FOR Y=1 TO 20
710 IF A(X,Y)<>45 THEN 730
720 B=INT(RND(1)*26)+65:A(X,Y)=B
730 NEXT Y:NEXT X
740 LPRINT :LPRINT "COMPUTER GENERATED WORD PUZZLE"
750 LPRINT :LPRINT NAME$:LPRINT
760 GOSUB 770:GOTO 860
770 ? "HIT RETURN TO PRINT":INPUT Q$:LPRINT
780 FOR X=1 TO 20:A$=""
790 FOR Y=1 TO 20
800 A$(LEN(A$)+1)=CHR$(A(X,Y))
810 A$(LEN(A$)+1)=" "
820 NEXT Y
830 A$=A$(1,LEN(A$)-1)
840 LPRINT A$:NEXT X
850 RETURN
860 ? "ONE MOMENT PLEASE":? "I'M ALPHABETIZING THE WORD LIST"
870 W=0:Z1=Z-1
880 IF W=1 THEN GOTO 950
890 W=1:FOR I=0 TO Z1-2:L=I*20
900 IF W$(L+1,L+20)>W$(L+21,L+40) THEN 920
910 GOTO 940
920 S$=B$:S$=W$(L+1):W$(L+1,L+20)=W$(L+21,L+40):W$(L+21,L+40)=S$
930 W=0
940 NEXT I:GOTO 880
950 ? "HIT RETURN TO PRINT WORD LIST":INPUT Q$
960 LPRINT :LPRINT D$:LPRINT :LPRINT "WORD LIST FOR: ";NAME$:LPRINT
970 LPRINT :NC=INT(40/(LE+2))

```



# INTRODUCING ELECTRONIC ARTS



Ap, At, C-64

## PINBALL CONSTRUCTION SET

by Bill Budge  
 "...The best program for the Apple II. Or for that matter, say others, for any 8-bit machine."  
 David Grady,  
 Computer Update

## ARCHON

by Jon Freeman,  
 Paul Reiche III, and  
 Anne Westfall

"...This is the kind of game I have been waiting to see... you are bound to fall for it. Imagine a chess game in which you can cast spells."

John Anderson,  
 Creative Computing



At, C-64

## HARD HAT MACK

by Michael Abbot and  
 Matthew Alexander

"...If you put Hard Hat Mack in the arena against all of the games on the market, one at a time, it would win most bouts in the opening seconds of the first round. It's that good."

Softalk



Ap, At, C-64



At, C-64

## M.U.L.E.

by Dan Bunten, Bill Bunten,  
 Jim Rushing and Alan  
 Watson

"Compete for financial advantage on a frontier planet. Three levels of complexity, fully animated, and the best musical score since Polliwog. The title creature is a funky masterpiece."

Softline



At, C-64

## MURDER ON THE ZINDERNEUF

by Robert Leyland,  
 Paul Reiche III,  
 and Jon Freeman

"Whodunit fans, drop your Agatha Christie and come running. This is your game! The graphics are among the most colorful and attractive I have seen in any game."

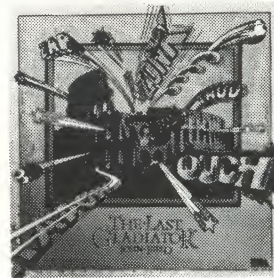
David Duberman,  
 Antic Magazine

## New THE LAST GLADIATOR

by John Field

"Kids control the action in this cartoon. This game is not only fun, it's funny. 3-D perspective with hand-to-hand arena battles...the first of its kind."

Dave Evans,  
 Cartoon Addict



Ap

## AXIS ASSASSIN

by John Field

"It's a rousing shoot 'em up, (like) Tempest but with more than enough differences to make it an outstanding and unique gaming experience."

Steve Davidson,  
 Arcade Express



Ap, At, C-64



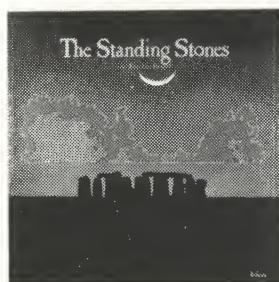
At, C-64

## WORMS?

by David Maynard

"Worms? is the kind of video activity that can wake you up in the middle of the night with thoughts of untried strategies. It's an exercise in programming artificial intelligence. \* \* \*"

Video Review



Ap

## THE STANDING STONES

by Peter Schmuckal and  
 Dan Sommers

A dungeon role-playing game with greater depth, variety and charm.

- 200 types of monsters and 15 levels
- Easier to start playing from Level 1, tougher to win at Levels 10 to 15.
- From gambling at cockroach races to a wise old man who solves riddles to the ultimate, the Holy Grail itself. Standing Stones simply goes farther!

## MUSIC CONSTRUCTION SET

by Will Harvey

A profound new way to learn and play music. It has no competitors.

- Songs are built-in so you can start immediately.
- Easy and fun enough for non-musicians; deep and powerful enough to enthrall a serious musician.



Ap, C-64

C-64 - Commodore 64 with disk drive  
 Ap - Apple II, II+, IIe with disk drive  
 At - Atari Home Computers with disk drive

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```

980 EPC=Z1/NC:IF EPC<>INT(EPC) THEN EPC=INT(EPC)+1
990 FOR X=0 TO EPC-1:LS$=B$:FOR Y=0 TO NC-1:N=(X+(EPC*Y))*20:IF N+LE>LEN(W$) THEN 1010
1000 S=Y*(LE+2):LS$(S+1,S+LE+2)=W$(N+1,N+LE)
1010 NEXT Y:LPRINT LS$:NEXT X
1020 ? :? "WOULD YOU LIKE ANOTHER COPY ";;INPUT A$
1030 IF A$(1,1)="Y" THEN LPRINT :LPRINT :LPRINT :LPRINT :GOTO 760
1040 END
1050 REM AUTOMATIC WORDS FOR PUZZLE
1060 ? "}"
1070 TRAP 1070:IF "ENTER NUMBER OF WORDS YOU WOULD LIKE":? "IN THE PUZZLE
[10-50]":INPUT ZN
1080 IF ZN<10 OR ZN>50 THEN 1070
1090 ? :? "ONE MOMENT PLEASE":? "I'M PICKING WORDS FOR THE PUZZLE"
1100 FOR F=1 TO 50:DL(F)=0:WORD(F)=0:NEXT F
1110 FOR F=1 TO ZN
1120 GOSUB 1180:DL(F)=R1:WORD(F)=R2
1130 IF F=1 THEN GOTO 1170
1140 FOR F1=1 TO F-1
1150 IF R1=DL(F1) THEN IF R2=WORD(F1) THEN POP :GOTO 1120
1160 NEXT F1
1170 NEXT F:GOTO 1200
1180 R1=INT((RND(1)*50)+1)*10:R2=INT((RND(1)*10)+1):RETURN
1190 REM READ AND GOTO PROCESS
1200 ? "}"
1210 FOR F=1 TO ZN:Z=F:RESTORE 1280+DL(F)
1220 FOR F1=1 TO WORD(F)
1230 READ A$
1240 NEXT F1
1250 GOSUB 290
1260 NEXT F
1270 Z=Z+1:GOTO 620
1280 REM WORD DATA
1290 DATA ASSEMBLER,ALFRED,ALLSTAR,ATARI,ASCII,ALGORITHM,
ADDRESS,ADD,ARITHMETIC,ADVENTURE
1300 DATA ASPRIN,ACHES,ABLE,ALWAYS,ARMY,
AIM,ACTIVE,AMPLE,ATTACK,AMID
1310 DATA BIT,BEGAN,BEFALL,BRING,BELOW,BRAG,
BREAD,BASEMENT,BEQUEST,BYTE
1320 DATA BAIL,BELLS,BLUE,BEEFY,BUILD,BEYOND,BETTER,BONDS,BARE,BEARD
1330 DATA COMPUTER,COMPUTE,COLUMN,CLEAR,CONCANTENATE,
CHOICE,CONTROL,CASSETTE,CULL,COPY
1340 DATA CALL,CAME,CHEWING,CAMEO,CROSS,CANNON,CHANGE,
CLOCK,COOK,CALENDER
1350 DATA DOT,DATA,DREAM,DISK,DRIVE,DOS,DASH,
DESK,DEFT,DELETE
1360 DATA DEVICE,DUAL,DULL,DETECT,DEN,DISCLOSE,
DISCOVER,DEBATE,DUCK,DRAWL
1370 DATA EFFORT,EMIT,EXTRA,EPSON,ERROR,ESCAPE,EARN,
EVERY,ENTERTAIN,ERNEST
1380 DATA EGO,EGOTIST,ELBOW,EJECT,ENDOW,ENCORE,
ENDURE,EQUIP,ERASE,EXERCISE
1390 DATA FIX,FILL,FORNEXT,FULL,FINE,FIRE,
FERTILE,FIND,FILE,FOAM
1400 DATA FAMILY,FOOD,FUN,FALSE,FAMILIAR,FINANCE,
FRIEND,FAVORITE,FEATHER,FLAW
1410 DATA GET,GETTER,GIVE,GLOAT,GREAT,GLEAM,GROW,

```



GLASS, GREEN, GRID  
 1420 DATA GEM, GLITTER, GRASS, GAME, GIVE, GARNISH,  
 GAMBLE, GAZER, GRUB, GIGGLE  
 1430 DATA HELP, HOT, HANG, HANGMAN, HASTE, HEAR, HEAVEN,  
 HERO, HEAL, HELPFUL  
 1440 DATA HAPPY, HINDER, HOTDOG, HANDY, HISS, HONK, HAMMER,  
 HARVEST, HATCH, HURDLE  
 1450 DATA INVENTIVE, IF, INITIATIVE, INTUITION, INTERESTING,  
 IMPORTANT, INCOME, INDEX, INLET, INQUIRE  
 1460 DATA INSTANT, ICE, INSULATE, ISLAND, ISSUE, ITCH,  
 ITEM, IDOL, INVOKE, INVOLVE  
 1470 DATA JOY, JUSTICE, JUMP, JOKE, JELLY, JAIL, JINN,  
 JOIN, JUVENILE, JUNK  
 1480 DATA JABBER, JELOUS, JAZZ, JACK, JAM, JUST, JERSEY,  
 JUGGLE, JIBE, JUDGE  
 1490 DATA KEEP, KEY, KING, KINDLY, KINK, KNIGHT, KNOTWORK,  
 KNOCK, KNOWN, KNOWLEDGE  
 1500 DATA KISS, KNIT, KETTLE, KITTEN, KLINGON, KNEAD, KNEE,  
 KINDLE, KNIFE, KNUCKLE  
 1510 DATA LOVE, LOOK, LABOR, LAMP, LOOP, LATTICE, LIST,  
 LEGAL, LEARN, LENGTHY  
 1520 DATA LACE, LACKEY, LEE, LADY, LAIR, LANCE, LINES,  
 LOST, LAND, LADDER  
 1530 DATA MATERIAL, MATH, METAL, MIX, MIXTURE, MIST,  
 MAIDEN, MOTHER, MEAL, MOLD  
 1540 DATA MACE, MALE, MAIL, MEMORY, MACHINE, MINOR, MINER,  
 MONEY, MADE, MAGIC  
 1550 DATA NATURE, NAME, NEXT, NICE, NOISE, NUTTY, NIECE,  
 NINE, NEIGHBOR, NEWS  
 1560 DATA NAVAGATE, NECTAR, NEET, NUGGET, NOVEL, NOTED,  
 NUMBER, NURSE, NYLON, NOTIFY  
 1570 DATA OUT, OPEN, ORGANIZE, ONLY, ORGAN, OUTLAW, OVEN,  
 OVERNIGHT, ORNATE, OWNER  
 1580 DATA OATH, OBEY, ORANGE, OBLIGATE, OBLONG, OBSERVE,  
 OBJECT, OBSTRUCT, OKAY, OCCASION  
 1590 DATA PUT, PACK, PUBLIC, PALACE, PAJAMAS, PEOPLE,  
 PAYMENT, PASS, PLACE, PENCIL  
 1600 DATA PARCEL, PINGPONG, PARTNER, PACKMAN, PATTERN,  
 PASTE, PAPER, PATENT, PATCH, PACE  
 1610 DATA QUIT, QUIET, QUEEN, QUIZ, QUICK, QUALIFY, QUARTER,  
 QUARTZ, QUIVER, QUOTE  
 1620 DATA QUACK, QUAKE, QUALM, QUART, QUEASY, QUID, QUILT,  
 QUINCE, QUIP, QUOTA  
 1630 DATA REGISTER, RADIATION, RACKET, RALLY, RECREATION,  
 RATIONAL, REPORTER, RECORDS, RECEIVE, REDUCE  
 1640 DATA RACE, REST, RADIO, RADIANT, RADIUS, RAID,  
 RUSSIA, RAIN, RAISE, RAMBLE  
 1650 DATA SCORE, SCRAPE, SCRAP, SENSIBLE, SEQUENCE, SHUNT,  
 STUDY, SCOPE, SOFTSIDE, SHUFFLE  
 1660 DATA STEADY, STUDENT, SCHOOL, SOAP, SOCIAL, SOCCER,  
 SOOT, SCOOP, SCOUT, SCIENCE  
 1670 DATA TAKE, TAPE, TIME, TEXT, TINT, THINK, THOROUGH,  
 TRANSPOSE, TACT, TRANSLATE  
 1680 DATA TEMPLE, TRY, TALK, TIDY, TELEPHONE, TIMBER,  
 THIMBLE, TIMID, THIGH, TRAIL  
 1690 DATA ULTIMATE, UNIQUE, ULTRA, UNCOMMON, UNDER, UNEQUAL,



URGE, USED, UPHOLD, URGENT  
 1700 DATA UMBRELLA, UMPIRE, UNBEND, UNBUCKLE, UNIFORM,  
 UNION, UNIVERSE, UPHOLD, UPRISE, URANIUM  
 1710 DATA VIOLET, VICTORY, VICE, VAST, VERIOUS, VEHICLE,  
 VENTURE, VERIFY, VERSION, VETO  
 1720 DATA VACANT, VISA, VAGABOND, VALISE, VEINS, VALUE,  
 VANISH, VARIED, VEGGY, VELVET  
 1730 DATA WONDER, WANT, WILL, WISH, WATCH, WORLD, WHEEL,  
 WIRY, WELCOME, WELLDONE  
 1740 DATA WADE, WAITER, WAKE, WILY, WALNUT, WEAR, WASH,  
 WATCH, WOMAN, WEALTH  
 1750 DATA XAVIER, XEBEC, XENOPHON, XERXES, XRAY, XYLEM,  
 XYLOPHONE, XMAS, XENON, XANADU  
 1760 DATA YES, YEARN, YEILD, YARD, YOUNG, YOUTH, YAM,  
 YONDER, YOKEL, YARN  
 1770 DATA YELLOW, YAWN, YAWL, YEAST, YANK, YEN, YODEL,  
 YACHT, YEAR, YELL  
 1780 DATA ZEBRA, ZERO, ZIGZAG, ZIP, ZAP, ZOOM, ZIPPER,  
 ZODIAC, ZEALOUS, ZENITH

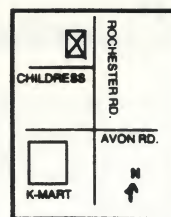


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